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Breadwinner or Caregiver?

How Household Role Affects Labor Choices in Mexico

Wendy V. Cunningham

Is gender a primary determinant of patterns of participation in the labor force among adult men and women with different household responsibilities? No, although gender affects employment decisions indirectly, through household role. Labor patterns are more similar for men and women who have the same household role.

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Summary findings

Recent volatility in the Mexican economy has required households to alter patterns of participation in the labor force, voluntarily or not. Cunningham uses panel data to examine patterns of labor force entry among adult men and women with different household responsibilities, asking whether gender is a primary determinant shaping these patterns.

She finds that labor supply patterns are driven more by household role than by gender. Heads of households, regardless of sex, behave similarly. Women who have neither spouses nor children behave more like men than like married women. They are also more likely than any other group to have inflexible, higher-paying jobs in the formal sector—which raises the question: Do employers discriminate based on gender or on household structure?

She also detects a strong added-worker effect among secondary workers, a result not detected in the labor markets of developed countries that have social insurance programs.

Finally, she finds that wives' choice of sector during downturns is subject to the households' earning needs, that husbands use informal wage or contract employment as an employer of last resort only in response to negative income shocks to the household, and that single mothers do not select the informal sector over the formal sector in response to either expected or realized negative income shocks.

The policy implications? Interventions that target women aren't necessarily appropriate because women are heterogeneous. And programs that aid household heads—male or female—should be directed toward employment that will last beyond the economic shock.

This paper—a product of the Gender Sector Unit, Latin America and the Caribbean Region—is part of a larger effort in the region to understand the role of gender in developing country labor markets. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Selpha Nyairo, room I8-110, telephone 202-473-4635, fax 202-522-0054, email address snyairo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at wcunningham@worldbank.org. December 2001. (48 pages)

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I. Introduction

This paper asks whether or not sex is the primary determinant of labor force participation patterns by using panel data to examine patterns of labor force entry among adult men and women who have different household responsibilities. Labor supply studies differentiate between men and women based on the assumption that individuals are homogeneous by gender (Smith 1983, Psacharopoulos 1994) and that biological differences and the socially ascribed roles due to them may be important factors in determining labor force participation patterns, indicating that models of female labor supply are distinct from those for men (Ashenfelter 1986). This paper suggests that "gender" alone may be a simplistic division, though, since labor supply behavior may be more subject to the constraints imposed by household roles rather than by sex, per se. Of course, gender itself may shape the constraints, but given that they exist, the paper suggest that an individual's role in the household as breadwinner[1] and/or caregiver may be a better explanation of differential labor force transition patterns than the sex of the individual.

A second goal of this paper is to identify how households cope with business cycle fluctuations. When the economy slows down, the potential labor force entrant must decide if he/ she will enter the labor force and if he/she does, which sector to enter. The entry decision is based on the income needs of the household, the level of homecare required, and the individual's position in the household, i.e. primary breadwinner or caregiver. If the individual is the primary breadwinner, he/she will enter, regardless of

[1] In this analysis, observations are selected into the sample if they are not working. Nevertheless, if an individual describes him or herself as the household head, we assume that he/she plays a role as a breadwinner or a caregiver. The breadwinner may simply be the person who assures that there is adequate

his/her gender and associated homecare duties. On the other hand, if the individual is not the primary breadwinner, during brief periods of economic need, such as business cycle downturns, she/he may act as secondary labor and enter the labor force. However, the need to also perform as caregiver will lead to entry in the more time- and location-flexible informal sector.

Answers to these two questions will also add to the debate about whether or not the labor market in Mexico is highly segmented. The informal sector is traditionally interpreted as an employer of last resort in highly regulated labor markets (Thomas 1992). A competing view suggests that the labor market is well integrated, so if people enter the informal sector, they may do so in search of flexibility (Maloney 1997, Cunningham and Maloney 1998). The sectoral allocation patterns detected in the study will reveal whether individuals always prefer the higher paying formal sector (or self-employment) jobs or if they enter the flexible, lower paying informal wage jobs to simultaneously fulfill market and household roles.

A Mexican household survey that follows individuals over five consecutive quarters for 1987-1993 is used for the analysis. It offers three advantages over most other developing country. First, each observation's labor force behavior over time can be identified, thereby omitting the problem of sample heterogeneity faced in cross-sectional time series studies. Second, the household survey permits the incorporation of information about the presence and labor market activity of other household members over the same period. Finally, the Mexican economy went through a full business cycle during this period, so labor supply during both peaks and troughs can be considered.

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household income, although it may be received through non-labor instruments or through the labor of other household members who are not the head of household.

Five groups of people who identify either themselves or their spouse as the household head are analyzed: married women (wives), married men (husbands), unmarried women with children (single mothers), unmarried women without children, and unmarried men.[2] Each group represents a mix of the breadwinner and/or caregiver roles and is examined in the context of two questions: 1) is household role, rather than sex, an important force behind labor force entry patterns, and 2) how do entry and sectoral choice patterns differ for each type of household head over the business cycle?

The paper is structured as follows: Section II describes a simple framework to motivate the connection among labor supply, business cycle fluctuations, and family structure. Section III describes the sample and the state of the Mexican economy over the seven year period. Section IV gives an overview of employment and sectoral allocation levels and transitions in a peak and a trough period for each type of head. Section V outlines the methodologies: a logit estimate to understand the decision to participate in the labor force, and a multinomial logit for sectoral choice decisions. The model estimates are given in Section VI. Section VII summarizes and concludes.

II. Analytical Framework

The decision to participate in the labor market is generally modeled as the individual's maximization of lifetime utility (happiness) subject to budget and time constraints. If the utility derived from the (marginal) expected wage is higher than that derived from the (marginal) hour of non-market work, the individual enters the labor force. In our analysis, all individuals are members of a household, so the form of the

[2] Unmarried men could not be disaggregated into "unmarried fathers" and "unmarried men without children" categories because the data do not identify fatherhood. Only motherhood is explicitly identified.

utility function and budget and time constraints must take into account the contributions and needs of other household members.[3]

The influence of household composition on the labor supply decision may be incorporated into the household head's utility function such that when the head optimizes her/his own utility, the utility of the other household members is also optimized (Mincer 1962). Tasks are assigned such that individuals with a comparative advantage in the labor market allocate their time to wage earning activities while others care for the household.[4] Gender was formally incorporated into the theory when Becker (1991) argued that comparative advantage was determined by the biological differences between men and women and the gender roles that emerge from these differences. Thus, biology and society dictate that women should care for the home and men should participate in the labor market.

The neat division of household and market tasks along gender lines is not always possible, for two reasons. First, the individual responsible for the economic well-being of the household may not be able to provide the necessary household income, so individuals who normally are not in the labor market may be required to enter the labor market. During economic downturns, we expect to see evidence of labor force entry among non-workers for two reasons. First, since there is no unemployment insurance in Mexico, households must insure themselves against unexpected income losses by sending their members to work when the likelihood of job loss or wage reduction increases. Second,

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[3] For a technical presentation of the theory, see, for example, Khandker 1988.

[4] Recently, these theories have been criticized in favor of bargaining models (Pollack 1994). Most bargaining models assume that all members simultaneously make their market and home labor allocation decisions based on their own utility function and the expected behavior of other family members. Recent work by Haddad, et. al. (1997) in developing countries and by Pradham and Soest (1997) in urban Bolivia, suggest that a Mincer/Becker model is still appropriate for developing countries. We will use this model to

there will be real negative shocks to income during this period through wage cuts[5] or lay-offs, so those households that do not self-insure will need to send someone to work, called an *added worker effect* (AWE).[6] If an added worker effect does exist in Mexico (it has not been clearly detected in developed country's labor markets), the statistics will show increased labor force entry when a primary breadwinner in the household loses his or her job.

The sector of entry depends on the needs of the household and the role of the individual in the context of the household. If there is a fall in household earnings, the new worker may need to enter the higher paying sectors in order to substitute for the fall in income, which tend to be the formal sector or the self-employment sector (Maloney 1998). However, given household roles, if the individual is also responsible for homecare, he/she may prefer the flexibility of contract work or of the lower paying informal wage sector. On the other hand, if the fall in income is not realized but a person still enters the labor force to act as insurance for potential decreases in income, entry to the lower paying jobs may be sufficient and it is less likely that homecare will be sacrificed for formal sector labor.

Second, in households without two responsible adults present such that each

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the extent of assuming that labor force participation decisions take the behavior of other household members as exogenous and that some of each individual's labor earnings are shared by the household.

[5] Maloney (1998) finds that adjustment downturns in Mexico occur primarily through wages rather than employment due to the high costs that dismissals incur on firms (Marquez 1992).

[6] Although the AWE is a theoretically sound idea, it has not been strongly supported by empirical evidence. Heckman and MaCurdy (1982) and Lundberg (1985) find that there is an added worker effect for certain groups of people, but it is very small. On the other hand, a different functional specification and more restrictive parameters in an earlier paper by Heckman and MaCurdy (1980), and original work by Layard (1980), and Maloney (1987, 1991) do not find any evidence of an added worker effect. Gruber and Cullen (1996) suggests that the absence of an AWE in the above studies is expected since the data are drawn from universes where social insurance programs distort labor supply behavior. All the countries used to study the AWE offer an unemployment insurance program that dampens the need for substitute labor and decreases the likelihood that secondary workers will enter the labor force. Mexico does not have such an income support program.

specializes in home or market work, the household head must play both roles. In Mexico, 25% of households are headed by a single adult who must act as both primary breadwinner and caregiver. In this case, the head would enter the informal sector in order to take advantage of the flexible location and time parameters the sector often offers.

Other members in the household will impose constraints on the head's time. The female head or spouse of the head tends to be responsible for care of the house and children, either doing the work herself or delegating tasks to other household members. Children or non-head adults may be substitutes for household labor, though, allowing the head/spouse to allocate time to the labor market. However, they may have the opposite effect and increase demands on the wife's home time if they depend on her for child and/or elder care.

Household composition may also affect sectoral choice. If a woman needs to go to work but her household duties also require a large time commitment, she may combine the two by going into an informal sector job. Such employment offers time flexibility since it is not subject to legally mandated shift and work week laws, but it also offers location flexibility since some types of informal work can be done in the home or in the community. Women with young children are most likely to take advantage of these employment arrangements.

Household members also affect the amount of money that is earned and spent. Non-head members may contribute to household income, thus supplementing the earnings of the head. However, they also impose a cost on the household budget constraint, thereby increasing the minimum level of income a household requires.

Taking all these factors together, it may be expected that labor force entry and

sectoral allocation trends are based more on household roles than gender. Several hypotheses will be tested. First, there are patterns that we expect to observe regardless of the status of the economy: i) married women are less likely to enter work than are women who do not have another breadwinner in the household, suggesting that household role matters more than sex in determining labor force participation; ii) women who head households similar to those of men have labor force entry patterns that are similar to men, i.e. breadwinners behave similarly regardless of sex; and iii) if gender discrimination is the primary explanation for low female labor force participation or higher female informal sector participation, then labor force entry rates for all women should be lower than men's, and rates in the informal sector should be higher than men's.

Second, a recessionary period will induce changes in labor force behavior such that: i) wives are more likely to enter the labor force when there is an expected or real shock to household income, but all other types of household heads should be less likely to enter since their non-work status in period one implies sources of non-labor income, and ii) wives are more likely to enter the flexible informal sector if there are children in the household, but the primary breadwinners should be unaffected by household structure, regardless of sex.

III. Data, Terminology, and an Historical Context

3.1 Sampling

The national Urban Employment Survey (ENEU) collected by the Mexican Statistical Institute (INEGI) for the period 1987-1993 is used. It is arranged such that an observation is selected into the data set, surveyed every three months, and then dropped from the sample after the fifth interview, thereby following individuals and their

households over 15 months. The seven years consist of 24 cohorts with approximately 3000 couple-headed households, 600 households headed by single mothers, 80 headed by unmarried women without children, and 200 headed by unmarried men without children, per cohort, where the head is in the age range 14-70. Each household member older than age 11 is surveyed about demographics, job search, characteristics of the job, current earnings, and reasons for labor force participation decisions. For those younger than 12 years old, only age is recorded. Observations within households can be matched to identify changes in household behavior over the period.

Both labor force entry and sectoral allocation patterns of household heads who were out of the labor force in period one[7] but in the labor force by period five are considered. The term "in the labor force" (ILF) is defined in the traditional sense; i.e. the individual is working or spent time searching for a job in the month prior to the survey. Conversely, being out of the labor force (OLF) indicates that the person is neither working nor actively searching for a job.

The terminology for sectoral choice is more controversial due to different institutions, data availability, and theoretical biases regarding the existence of the informal sector.[8] Five primary sectors are identified, based on characteristics of the firms and remuneration (Davila 1997): formal wage, informal wage, unpaid, self-employment, and contract employment. The formal wage sector is defined as the set of jobs in firms

[7] An individual may be selected into the data set in any of the four periods each year, so "period 1" for cohort x is the first period that the cohort is selected into the survey. It is not a chronological term referring to the first period of a calendar year.

[8] Traditional theories suggest that the presence of various sectors are characteristic of a segmented labor market where institutional barriers such as minimum wage laws (Stiglitz 1986), unions, or employment quotas force up labor costs and lead to an excess supply of labor at the offered wage. An alternative hypothesis (Hart 1972) does not view the labor markets as segmented but instead recognizes that they are well integrated and the different sectors reveal the heterogeneity of work preferences of the labor force.

with more than six employees that offer wages/salaries and federally mandated benefits to their workers. The informal wage sector is composed of those jobs in firms with fewer than six employees that pay wages or salaries but do not pay benefits. Unpaid sector jobs are those that do not provide any remuneration or benefits to the workers. The self-employment sector is comprised of those firms that do not offer benefits and have fewer than six employees, one of whom is the owner. Contract workers are those who are piece-workers or have a short-term contract with a termination date. Table 1 summarizes the labor force participation and sector of participation terms.

3.2 Mean values

Table 2 compares the mean values for each type of household head. On average, wives are younger than single mothers. Unmarried men and women without children show a relatively uniform age distribution, indicating that individuals at all ages are fairly equally represented, but young women are slightly over-represented. Husband's ages are distributed similarly to the wives, but they are, on average, three years older. Women without husbands or children tend to be the best educated and single mothers have the fewest years of education. This reflects the age distribution, since more recent generations have higher mean education levels.

Approximately 94% of couples are married, while 83% of single mothers were married (10% divorced, 21% separated, 52% widowed), 12% of women without children were in a union (8% widowed), and 40% of single men were married (6% divorced, 11% separated, 23% widowed). Over the period, 0.14% of couples in a consensual union became married and 0.11% split up. Nearly 1.1% (1.2%) of single mothers wed (or

joined a consensual union) as did 1.8% of women without children, while no single men either married or entered a consensual union.

Married couples tend to have more children at all age groups and fewer non-spouse adults than do households headed by unmarried individuals. In the aggregate, those without spouses do add children to the household over the five periods.

3.3 The Mexican economy

From 1987-1993, the Mexican economy moved through a trough-to-trough period in the business cycle. The 1982 debt moratorium and subsequent austerity measures and debt renegotiations lead to negative growth in the early 1980s and very slow growth through the mid-1980s (Lustig 1992). By the end of 1986, loans, foreign investment, financial deregulation, privatization, and cuts in public expenditure led to a 1988-1990 boom period (Ros 1996). However, by the early 1990s, with the recession in the US and the overvalued exchange rate, the economy slowed once again (Graph 1).

IV. Labor force participation over the business cycle

4.1 Participation in the labor force and by sector: levels

A traditional breakdown by sex obscures the importance of household role and intra-gender heterogeneity in both labor force participation and sectoral choice. Table 3[9] shows that over 70% of women and 6% of men are out of the labor force. However, while 76% of wives are out of the labor force, only half of the single mothers in the

[9] Using all 24 cohorts, the sample consists of 77,192 couple-headed households, 13,787 households headed by unmarried women with children, 1,997 households headed by unmarried women without children, and 4,021 households with unmarried men as the head.

sample and 30% of single women without children are neither working nor looking for jobs. This compares with 8% of husbands and 13% of single men. Thus, wives, 92% of whom have working husbands, drive the female participation statistic and obscure the fact that a high percentage of women without spouses are in the labor force. In fact, the participation patterns of women without spouses or children are more similar to those of men with the same household structure (no spouse, no children) than they are to women who have differently structured households.

Sectoral allocation also divides more cleanly along household roles rather than biological lines, as shown by Table 4. Due to the large number of wives out of the labor force, we will only consider the economically active population (EAP).[10] Over 13% of the working wives are in unpaid jobs, while less than 0.65% of all other groups are. In fact, all unmarried people, whether male or female, have approximately the same level of participation in the unpaid sector. This difference occurs because all unpaid wives have another source of labor income: the breadwinner (husband), but for those who are the primary earners in their households, unpaid employment does not seem to be an option, even if they are female.

Informal paid jobs are often cited as employing the most vulnerable workers, usually single mothers (Standing 1989). However, single mothers, who are the primary breadwinners of the family, have informal sector attachment patterns that are closer to men with similar economic responsibilities. While 34.9% of single mothers are self-employed, 30% of men, who are also the primary breadwinners, are self-employed but only 24% of wives, those without primary income generating responsibilities, are in this

[10] The EAP sample sizes are 18,766 wives, 7,066 single mothers, 1,383 unmarried women without children, 72,496 husbands, and 3,497 men without spouses.

sector. Furthermore, informal wage employment of single mothers (13.8%) is more similar to unmarried individuals (8.5%) than wives (7.8%). Finally, the probability of contract work is nearly equal for all groups except husbands, who are more likely to hold these quasi-self-employed/ employee positions.

Low risk, high compensation formal sector jobs[11] are assumed to be the most favorable and therefore the sector where gender discrimination is thought to be the highest, but it is primarily populated by single women, conditional on the size of the sample. Although male household heads (51.6%) outnumber female formal wage employment (46.9%), over 62% of unmarried, childless women work in large firms and collect benefits while 47% of unmarried men and 51% of husbands hold such jobs. Employers cite a preference for women without spouses or children since their household responsibilities do not conflict with their work and they are more compliant and responsible than are men, who are prone to alcoholism and absenteeism (Chant 1991). Single women with children and wives, the most likely to have inflexible household responsibilities, are less likely to be in the formal sector (43.7% and 47%), respectively.[12] Thus, even though employers admit that they discriminate against men, their primary explanation for hiring unmarried women is an absence of household responsibility, i.e. they openly acknowledge discrimination based on household role.

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[11] The benefits associated with formal sector jobs are estimated to increase the wage bill by 80% (Marquez 1984).

4.2 Transition Patterns over the Business Cycle

Studying transition patterns and trends may reveal 1) how households cope with business cycle shocks and 2) the importance of household role in that decision. Two cohorts are drawn from the 24 cohort sample to compare labor force entry behavior in a peak and a trough period. The sample for the expansionary period is composed of individuals who were OLF in the third quarter of 1989[13] and for the contractionary period from the third quarter of 1992.[14] The sample sizes of men and women without spouses or children were too small to include in the analysis.

Table 5 summarizes the conditional probabilities (multiplied by 100) of attachment to state k by period 5 given that the individual was OLF in period 1. The top entry in each cell is the transition of between OLF and state k between periods 1989:3 and 1990:3 and the bottom entry is the transition between OLF and state k between 1992:3 and 1993:3. Letting P_j represent the count of individuals OLF in period 1 and P_{jk} represent the count of individuals who moved from OLF to sector k by period 5, the conditional probability is calculated as:

$$\Pr(\text{sector k in period 5} \mid \text{OLF in period 1}) = P_{jk} / P_j \qquad (1)$$

Wives demonstrate an AWE and a propensity for self-employment when the economy is deteriorating, while single mothers and husbands do not. Table 5 shows that wives are less likely to remain OLF during bad economic times: less than 10% enter in

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[12] The near equality of these statistics do not necessarily indicate that there is not discrimination against women in formal employment since a higher percentage may prefer formal sector jobs but are discriminated against in the hiring process so they turn to OLF status.

[13] Sample size of 2410 wives, 200 husbands, and 261 unmarried mothers.

[14] Sample size of 2347, 192, and 265 of wives, husbands, and single mothers, respectively.

expansions, but 13.2% enter in recessions. Although single mothers seem to show the same pattern, the difference in proportions is not significant.

Of the states of entry, wives are more likely to be unemployed, but single mothers and husbands are not. Perhaps this is because single mothers and husbands have to work but wives, often those who will act as insurance, may spend more time searching for jobs, since their labor income crisis has not yet been realized. Also, wives are more likely to start their own small firms when the economy gets bad whereas others are not. The wives may have the resources to undertake the project using their husbands' earnings and eventually generate the extra income. Husbands, on the other hand, usually do not have another primary source of income,[15] so they may be forced to look elsewhere for less costly means of employment. Interestingly, single mothers do not increase the likelihood of self-employment in crisis, although this is assumed to be the refuge of the most vulnerable groups. Instead, salary work (though the difference in proportions is not significant) seems to be the sector of entry.

V. Methodology

The decision to enter the labor force is distinct from the choice of sector. Ideally sector choice would be estimated conditional on labor force entry, but given the current technology, this is not possible.[16] Instead, a labor force participation decision model is estimated and then, keeping in mind those who sorted themselves into the labor force, a

[15] Only 15% of non-working husbands have working wives.

[16] The error terms from a labor force entry model have a discrete rather than a normal or a logistic distribution. Thus, we would have to estimate a non-parametric sectoral choice model, a technology that is still in the experimental phase.

sectoral choice model is estimated.

The variables of interest are whether or not the head enters the labor force when 1) economic conditions deteriorate, 2) other household members lose their jobs, 3) household labor income falls, and 4) household composition changes. To identify whether or not the entry probabilities differ along household roles or gender lines, each household role/gender group is analyzed separately. Following a methodology used by Valletta (1993) and Maloney (1998), the data are treated as a cross-section but transition dummies and dummies for those variables that change over the five periods are included.

5.1 Labor force participation - logit

The sample consists of all 24 cohorts.[17] The entry decision is estimated as a logit model, corrected for heteroscedasticity (Fernandez 1998), that estimates the probability of labor force entry by period 5 conditional on being out of the labor force in period 1:

$$\begin{aligned} \Pr(P_{olf->ilf}) = \Lambda[\alpha + X\,\beta_1 + (UNEMP)\,\beta_2 + (INVOLF)\,\beta_3 + (HHINV)\,\beta_4 \\ + (FALLHHY)\,\beta_5 + (FALLH10)\,\beta_6 + (FALLH25)\,\beta_7 + \\ (FALLH50)\,\beta_8 + (FALLH75)\,\beta_9 + (FALLH100)\,\beta_{10} + \varepsilon] \end{aligned} \qquad (2)$$

where Λ is the logistic distribution, X is a vector of control variables, UNEMP is the unemployment rate in each cohort's first period, INVOLF is a dummy that takes a value of 1 if the husband (wife) involuntarily left his (her) last job over the five periods, and HHINV is the number of workers in the household (less the husband/wife) who lost their jobs between periods 1 and 5. FALLHHY is the change in family labor income between periods 1 and 5, net of the head's earnings and the dummies FALLH10, FALLH25,

FALLH50, FALLH75, and FALLH100 take a value of 1 if the fall in household labor income is in the range 1-9%, 10-24%, 25-49%, 50-74%, and 75-100%, respectively, and 0 otherwise.

There are three specifications of equation (2). In the first model, the change in income variables (those associated with β_5 - β_{10}) are dropped so we may focus on the impact of unexpected shocks to household *employment*. However, involuntary job losses may not accurately capture an increased need for household income for two reasons. First, labor market in Latin American may adjust through wages, so a decrease in real wages rather than employment is more likely (Marquez 1994). Secondly, household members are heterogeneous and thus have different earnings potential so entry and exit by multiple household members probably affects household income. Thus, Model 2 tests the response of household heads to a fall in *total household labor income* by including the control variables (X), the unemployment rate (UNEMP), and the change in household income variable (FALLHHY). To account for non-linearities in the continuous variable FALLHHY, the third model drops all variables except the control variables, the unemployment rate, and the five dummies that identify the magnitude of the income fall to identify the labor supply responses to different *levels of household labor income* decreases. If an added worker effect exists, we expect a positive coefficient on each of the independent variables that are not included in vector X.

The control variables include characteristics that would influence the reservation wage and expected market wage through household structure, labor demand variables, and productivity indicators. Each are described and their reasons for inclusion are stated

[17] The sample size is 53,466 wives, 4,193 husbands, 6,373 single mothers, 448 unmarried women without children, and 542 unmarried men.

in Table 6.

5.2 Sector of participation - multinomial logit

To identify which sector workers enter, only those household heads who were OLF in period one and became employed by period five are included in the sample (12,223 wives, 1,064 husbands, and 801 single mothers). The sample size of unmarried individuals without children was not large enough to estimate sectoral choice. A multinomial logit framework is employed where the sector of exit may be formal wage, informal wage, self-employment, or sub-contracting.[18] The same independent variables as above will be used.

VI. Estimation results

6.1 Labor Force Participation

The following estimation identifies the characteristics of labor force entrants. Entry patterns are substantially different among the three groups. In particular, wives tend to act as secondary labor, entering as a substitute to household labor or as insurance. Husbands, on the other hand, are very unresponsive to changes in household employment or labor income. They probably have other income sources, since they enjoy the luxury of not working in period one. Single mothers fall between these two extremes, perhaps demonstrating the role of both caregiver and breadwinner. Unmarried individuals without children do not show identifiable patterns. Estimates of the shock variables are presented in Table 7, those of household structure are in table 8 and demographic, labor

[18] Unpaid and firm owners were dropped due to the small sample size in each job type.

demand, and search variables are in table 9.

6.1.1. Labor force entry in response to economic shocks

Wives most strongly demonstrate an added worker effect, both as a form of insurance and as a source of emergency income. When the unemployment rate is higher, they are more likely to enter the labor force.[19] Furthermore, if their husbands unexpectedly lose the job held in period 1, wives are likely to enter, but they do not respond to sudden job losses of other household members. The change in household income explains this pattern. Models 2 and 3 show that a wife begins working if household labor income falls by 25% or more. Since husbands contribute, on average, 75% of household labor income, the wives are substituting their labor earnings for a fall in household income, not for a change in LFP status by a particular family member.

Husbands are nearly unresponsive to economic shocks. They do not enter the labor market when the unemployment rate increases, nor do they respond to an unexpected job loss by anyone in the household. Only when labor income falls by 75% or more do they look for work.

Single mothers are more responsive to shocks than husbands are, but less than wives are, perhaps due to being both the breadwinner and the caregiver. If there are multiple head adults in the household, home and market tasks are divided among them. Wives have the most "non-market" time to offer in times of crises. The fact that they are

[19] In another specification of the model, a variable was included to measure the change in the unemployment rate between period 1 and period 5. This variable was positive and significant in all cases and did not appear to be correlated with any other independent variables in the original specification. We do not include this specification in the discussion, though, since inclusion of the change in the unemployment rate variable necessitates dropping the last four cohorts for which we do not have unemployment rate data of their respective fifth periods. Although we could run the analysis with only twenty cohorts, we would face sample size problems with some of the household variables.

not working in period 1 does not imply that their family relies on a source of non-labor income. Instead, 92% of wives have working husbands. Husbands, on the other hand, tend to work. If they are not working, they probably have a source of non-labor income (only 15% of non-working husbands have working wives), in addition to some household labor income earned by non-heads. Thus, in households where most income comes from labor, even a small shock to labor income will lead to a higher likelihood of entry than in households where a high percent of income comes from other sources. Only very large income shocks in these households lead to entry by the head. Single mothers fall between the two. They do not have another primary source of labor income, as wives do, so they probably get much of their household income through non-labor sources and wages of other household members. On the other hand, they are more likely to be OLF than are husbands so more of them are potential labor force entrants. Many of them can enter and will enter if there is a need.

Household heads without spouses or children do not respond to the state of the economy, shocks to household labor, or shocks to household income. Since labor force participation rates among these groups are high, we would not expect the few who are OLF to enter the labor force under the risk of labor-income shock. Furthermore, they are probably the most dependent on their own earnings ability. Since, by definition, they are not working in period 1, they must have other sources of non-labor income (pensions, financial instruments, rents), so a labor-income shock will not affect them. Also, if they are living in communal (not familial) arrangements, they are likely to be self-sufficient and thus not responsive to earnings of roommates.

These results suggest that wives are the most responsive to labor-income shocks,

single mothers are less so, and women without families are the least, demonstrating high heterogeneity among women. However, single mothers behave somewhat like husbands and single women do not differ from single men, so we may postulate that sex matters less than does household role in labor supply decisions. It is not the fact of being a woman that leads to entry by wives, but rather the fact of having to substitute for the primary breadwinner that leads to her entry.

6.1.2 Household

The relevance of household structure is tested directly by considering the influence that children or other adults have on labor force entry, controlling for economic shocks. Household structure is a black box that is often used to explain women's, and to a lesser extent men's (Nakamura and Nakamura 1992) labor force participation decisions. In particular, lower female participation is tied to the presence of young children, but higher participation is explained by the presence of daughters or other adult females in the household that can perform the household tasks. These trends appear in wives' labor force participation patterns, but not in those of single mothers and husbands. The sign and significance level of the household structure variables are listed in Table 8.

Constraints to labor force entry

The presence of young children (age 1-5)[20] discourages a wife's entry into the

[20] The newborn variable may be endogenous since the decision to bear a child and the labor force participation decision may be realizations of the same factors. If a woman has low work potential, the opportunity cost of childbearing is low so a lower propensity to enter the labor market may exist even if a child is not born. Regardless of whether or not the child represents a time constraint or low earnings potential, his/her presence does decrease the likelihood of labor force entrance for wives. Existing children are exogenous parameters so we do not need to be concerned with a biased estimator.

labor force as does an increase in the number of young children in her household via childbirth, adoption, or caring for someone else's child. On the other hand, the number of school aged children (6-11) is not correlated with a lower likelihood of labor force participation. Perhaps school serves as daycare for these children so they no longer impede the wives' labor force entry.

Husbands have opposite patterns, though, as they are more likely to enter when a young child is present. Since they tend to be the primary breadwinner with few caregiver responsibilities, they must generate the resources that capital-intensive children impose on the household (Nakamura and Nakamura 1992). They are not responsive to the presence of school–aged children, either.

The breadwinner role seems to conflict with the caregiving role for single mothers since their labor force entry is neutral to the presence of children. On the one hand, the income needs of the family may exceed the opportunity cost of staying home to care for the children so we may expect these women to enter the labor force when there are more young children in the household. On the other hand, young children cannot simply be left alone so they may impede labor force entry. However, it is likely that when single mothers need to work, a need that is somewhat independent of the marginal children in the household, they find other childcare arrangements. These arrangements are not optimal alternatives, though, since married women do not use them, but they do allow labor force entry by women who need to work.

Aids to labor force participation

Teenaged girls seem to alleviate wives of their home responsibilities and allow

labor force entry but teenage boys and other female adults in the household impede entry. The presence of a teenage daughter does increase the probability that the wife enters paid market work. These girls probably substitute for the primary caregiver's labor thereby lowering the reservation wage of work. Older sons and adult women have the opposite influence as their presence decreases the likelihood of married mother's labor force entry. This may be due to a higher opportunity cost of market work as teenage boys require more care. Alternatively (and more probably), these boys and the adult women may substitute for the wives in the labor force.

Conversely, the presence of teenagers or other young adults in the household does not induce single mothers or husbands to enter. Since the household heads are ultimately responsible for the economic well-being of the household, they are more sensitive to economic needs, and remain little constrained or aided by other potential labor market substitutes or homecare givers.

A change in marital status is a very important influence on labor force entry for wives and single mothers since it alters their roles. Married women are less likely to go to work than are those who are in a consensual union, possibly because the latter have greater risk for separation so they are more willing to enter the labor market to invest in themselves in preparation for a breakdown of the household. Women who split from the couple arrangement (divorce, separate, widow, break the consensual union) in the five periods are more likely to enter the labor force as they become responsible for generating the income to support themselves. Conversely, single mothers who either marry or enter a union are less likely to enter the labor force. Marital status does not affect husband's work decisions and a change in status does not significantly explain labor force entry by

those without children or by those who were husbands in period 1.

In summary, household structure does not constrain labor force entry by single mothers or husbands, but it is highly influential in wives entry. If single mothers enter the labor force, they do so because they must work. They cannot be and are not constrained by their role as caregiver.

6.2 Sectoral Choice

Traditional development theory cites the purposes of the informal sector as an employer of last resort (Thomas 1992). If, indeed, it is a source of jobs when economic times are difficult, we would expect the probability of exit to self-employment, informal wage jobs, and contract work to increase relative to formal sector jobs if household employment or income fall. However, the sector of entry is also subject to household structure. If the wife needs to work, she is likely to choose a flexible job, such as informal wage or contract work over the more restrictive formal sector. Single mothers and husbands, on the other hand, are likely to go to the highest paying sectors, formal wage or self-employment, rather than informal wage employment, that give less flexibility for homecare activities. The estimated coefficients of the variables for the probability of exit to the formal sector over state k are given in Tables 10-12 (shock variables, household structure, and others, respectively) and the sign on the coefficient indicates if the probability of exit to formal is higher (>0) than exit to sector k and vice-versa, unless otherwise noted.[21] The sectoral choice decision is empirically examined for

[21] The coefficient estimates of multinomial logit estimates are difficult to interpret. However, the relative risk ratios allow us to construct ratios such that if the ratio on a variable x for sector j over sector k is larger than 1, then as x increases, the likelihood of exit to sector j relative to sector k is increasing. This may occur

wives, husbands, and single mothers.

6.2.1 Labor force entry in response to economic shocks

Wives that enter the labor force select sector based on household need. As the unemployment rate increases, wives are more likely to enter any informal rather than formal sector job. Likewise, if her husband unexpectedly loses his job, the wife is more likely to enter informal wage rather than formal wage employment. However, if the job loss is associated with a large fall in household labor income, the wife is more likely to enter the formal sector rather than any informal sector job. Thus, a job loss associated with a negative blow to income is answered by entry to the higher paying formal sector (Maloney 1998), rather than the traditional "sponge" jobs, while the informal sector seems to play an insurance role by employing wives when the risk of negative income shocks increase.

Husbands are sector specific when their entry plays a insurance role, but not when responding to falls in income. Similarly to wives, husbands who enter the labor force are more likely to go into the informal wage sector or contract work compared to the formal sector when the unemployment rate increases. These findings directly support the assumption that informal work arrangements are the employers of last resort when the economy is tight. However, the self-employment does not serve as a sponge sector, supporting Maloney's (1998) findings that men's participation in the self-employment sector is pro-cyclical. Furthermore, husbands do not appear to select specific sectors in response to negative employment or income shocks in the household. The exception is a

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either due to an increase in the numerator (probability of exit to sector j) or a decrease in the denominator (decreased likelihood of exit to sector k).

higher likelihood of informal employment rather than the formal sector when household earnings fall by less than 10%.

Single mothers are not more likely to enter any particular sector in response to risk or to family earnings losses. This challenges the assumption that the informal sector is an employer of last resort when the economy is tight since the probability of entry to formal is not different from entry to any other sector for this group. Also, this demonstrates that all women do not use the informal sector in the same way in response to economic shocks. Instead, single mothers have patterns that are very distinct from wives but more similar to husbands.

6.2.2 Household aids and impediments to labor force entry

Only wives seem to take into consideration household constraints when selecting a sector, as shown in Table 11. Wives with children are more likely to enter any of the informal sectors over formal wage. A higher likelihood of informal employment is probably due to the flexible work shifts and location of informal firms. Young adults in the household increase the probability of wives' entry into self-employment rather than wage jobs but older females increase the likelihood of formal sector employment. The younger adults may provide unpaid labor to the wife's business while the older women may provide unpaid labor to the wife's household job, thereby allowing her to divert her time to the more structured formal sector.

Husbands and single mothers seem to use the other members of the household to aid with market work rather than allowing them to impede their earnings responsibilities. The primary breadwinners with young children do not select any particular sector.

However, those with school aged or teenaged children have a propensity for contract work rather than formal sector jobs. Since these children do not need the intensity of care that their younger siblings do, they are possibly used as unpaid workers to help supplement family income in a covert manner.

The difference between wives and single mothers again demonstrates the importance of household roles. If a single mother must enter to support household income, she does not have the option to select lower paying informal sector jobs, i.e. contract or informal wage work in order to care for children. Instead, she must have other childcare arrangements.

The strength of the marital contract and its implication for future household roles affect contemporaneous sectoral allocation patterns. Women who are married rather than in a consensual union are more likely to participate in piece work than in any other sector and more likely to enter self-employment than wage employment. A higher likelihood of entry to non-wage employment may be due to the lower risk of economic hardship provided by the rigid marital contract, an informal source of financing, and/or gender roles. Those in a consensual union do not have a formal contract for a long-term relationship between the partners, so there is a higher risk that the union will end and the woman will have to support herself. Thus, investment in the formal labor market is as important as investment in the home market since there is a high probability that the woman may need the labor market skills and connections. Also, a husband who is married may be more likely to supply his wife with capital for piece work or self-employment since he knows his wife's earnings and capital are more likely to benefit him than if the couple were in a weaker consensual union arrangement. Finally, the flexibility

that piecework offers allows the woman to invest in her job as a housewife while contributing to family income. If the partnership in period 1 ends by period 5, the ex-partners who go to work are more likely to enter contract or informal wage work than formal wage work. These women may have faced an unexpected shock, so their need to rapidly generate income may have precluded them from an extended search to find paid labor. Furthermore, their human capital may have eroded during the period of union. A change in marital status does not induce entry into any particular sector by husbands or single mothers.

VII. Conclusions

An analysis of the data shows that labor patterns are more similar for those with the same household roles than for those of the same sex, implying that it may be more appropriate to take into consideration household needs and resources than sex when considering labor supply of the head. Gender does affect labor supply decisions, but our results suggest that it has an indirect effect, entering through household role rather than directly. Women who do not have spouses or children to care for behave more similarly to men than they do to married women. In fact, women without either a spouse or children are more likely than any other group to be in the higher paying, inflexible formal sector jobs, bringing into question whether or not employers discriminate based on sex or on household structure. Married women, on the other hand, are secondary workers whose labor supply is very contingent on household responsibilities.

From a policy perspective, it is not necessarily appropriate to use "women" as a target group since they are a very heterogeneous group. Short-run interventions (that take

constraints as given) should take into account that wives will enter the labor force for short periods when the risk of a negative shock (to act as insurance) or an actual fall in household income occurs (substitute labor), but they are not permanently in the labor force.[22] Thus, in the short run, they are in need of unemployment insurance programs and job matching or short-run income generating opportunities. Single mothers and husbands, on the other hand, also enter in response to the shock, but less so, and single women's and men's labor force entry is not subject to the economy. Programs that aid household heads, whether male or female, should be directed toward employment that will last beyond the economic shock.

The informal sector does play a role during economic downturns. In particular, the lower paying informal sector jobs, contract or informal wage employment are the sector of choice when labor force entry is a response to an insurance need (for married individuals). However, when there is a negative shock to household income, wives are more likely to enter the higher paying formal or self-employment sectors. Thus, individuals seem fairly able to enter any sector, but the sector of choice depends on the immediate income needs of the household.

Household structure influences the labor force entry of wives, but not of single mothers. Wives with young children are less likely to enter the labor force, and when they do, they tend to go into the more flexible informal sector jobs that allow them to combine homecare and market work. Single mothers do not adjust either labor force entry or sector of entry based on the presence of young children. Initially, this may be interpreted as an absence of a need for childcare programs for single mothers. However,

such a conclusion is premature. Single mothers often do not have the option of selecting lower paying informal wage or contract jobs since if they begin working, they do so with the intent of generating maximum income with minimum time inputs. Thus, they must find other childcare arrangements. Such arrangements are probably not optimal, though, since married women, who may either choose to care for their children themselves or send them to these "alternative" arrangements, tend to choose the homecare model, indicating that the benefit of caring for the children herself outweighs that of holding a job and hiring someone else to care for the children.

[22] Logit estimates of the probability of moving from ILF to OLF show that wives are more likely to exit the labor force when the economy improves; i.e. when the unemployment rate falls.

VIII. Tables and Graphs

Table 1: Labor force and sectoral terminology

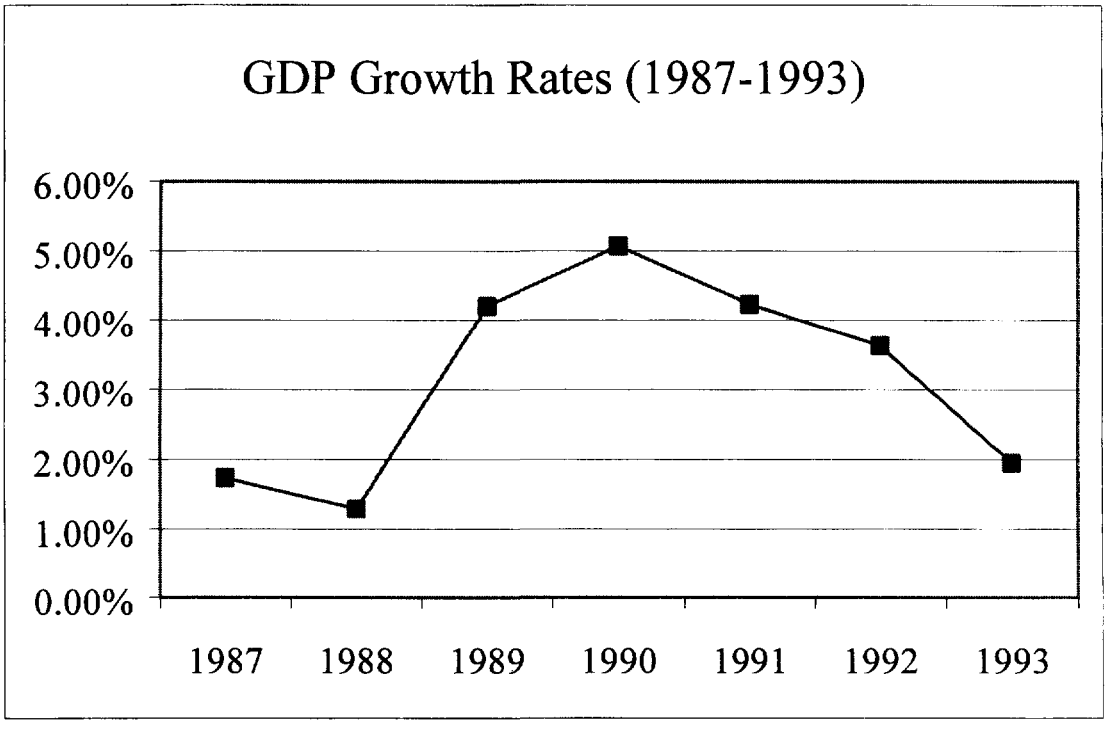
labor force participation status	
out of the labor force (OLF)	not employed and not looking for a job
in the labor force (ILF)	either wage or non-wage employed or looking for a job
unemployed	searched for a job for at least one hour in the previous week
informal employment	
unpaid	performed market work for at least one hour in the last week without compensation
self-employed	either self-employed or owner of a firm with less than 6 employees in which the employees do not collect benefits
informal wage	salaried employee or shift worker in a firm with less than 6 employees and benefits are not collected
contract/piece	a "self-employed" worker paid by the piece or contracted for a period of time or a quantity of output
formal employment	
formal wage	salaried employee or shift worker in a firm with more than 6 employees and/or collect benefits
firm owner	owner of a firm with more than six workers

Table 2: Average sample characteristics[1]

	women			men	
	Wives	Single mothers	unmarried, no children	Husbands	unmarried
Demographics					
Age	38.33 (11.04)	49.83 (11.2)	42.28 (14.93)	41.66 (11.7)	43.26 (14.87)
Education	5.93 (3.17)	4.66 (3.27)	6.82 (3.17)	5.94 (3.17)	5.67 (3.32)
Marry	0.0014 (0.037)	0.011 (0.11)	0.018 (0.13)	0.0014 (0.037)	0
Split	0.0011 (0.033)	---	---	0.0011 (0.033)	---
Consensual union	---	0.012 (0.11)	0.0052 (0.072)	---	0
Was married	---	0.83 (0.38)	0.12 (0.33)	---	0.4 (0.49)
Household					
Add kid	0.074 (0.26)	0.034 (0.18)	0.064 (0.25)	0.074 (0.26)	0.0051 (0.071)
Less kid	0.015 (0.12)	0.024 (0.15)	---	0.015 (0.12)	0.0037 (0.061)
Female age (18-60)	0.34 (0.69)	0.55 (0.79)	0.46 (0.72)	0.34 (0.69)	0.52 (0.82)
Male age (18-60)	0.35 (0.71)	0.54 (0.81)	0.21 (0.51)	0.35 (0.71)	0.39 (0.71)
Female age (61+)	0.022 (0.18)	0.04 (0.2)	0.11 (0.33)	0.022 (0.18)	0.1 (0.31)
Male age (61+)	0.0071 (0.084)	0.0075 (0.086)	0.018 (0.14)	0.0071 (0.084)	0.012 (0.11)
Newborn	0.086 (0.28)	0.01 (0.1)	0.00052 (0.023)	0.086 (0.28)	0.0002 (0.014)
Children age 1-5	0.5 (0.73)	0.11 (0.37)	---	0.5 (0.73)	0.014 (0.14)
Children age 6-11	0.71 (0.92)	0.28 (0.62)	---	0.71 (0.92)	0.057 (0.31)
Daughters age 12-17	0.36 (0.65)	0.26 (0.55)	---	0.36 (0.65)	0.069 (0.3)
Change in daughters 12-17	0.0011 (0.035)	0.0011 (0.035)	---	0.0011 (0.035)	0.0002 (0.014)
Sons age 12-17	0.38 (0.67)	0.27 (0.57)	---	0.38 (0.67)	0.085 (0.35)
Total adults in hh	2.71 (1.16)	2.14 (1.26)	1.8 (1.02)	2.71 (1.16)	2.03 (1.22)

[1] standard errors in parentheses.

Graph 1: GDP Growth Rates



* Derived from the IMF's International Financial Statistics

Table 3: ILF/OLF - all 24 cohorts (%)

	women				**men**		
	all	wives	single mothers	single no children	all	husbands	single
OLF	70.71	75.69	48.74	30.75	6.68	6.08	13.03
unemployed	0.84	0.69	1.47	2.0	1.59	1.52	2.19
n	90239	77192	13787	1997	80239	77192	4021

Table 4: Sectoral allocation - all cohorts (%)

	women				**men**		
	all	wives	single mothers	single no children	all	husbands	single
unemployed	2.86	2.85	2.86	2.89	1.71	1.62	2.52
unpaid	9.21	13.01	0.6	0.65	0.25	0.23	0.46
informal s-e	26.36	23.72	34.86	21.19	30.33	30.01	31.31
informal salary	9.34	7.75	13.76	8.24	6.62	6.45	9.27
contract/piece	4.78	4.94	4.37	3.54	7.46	7.54	5.98
formal wage	46.92	47.06	42.74	62.84	51.61	51.73	48.73
firm owner	0.53	0.51	0.6	0.51	2.03	2.07	1.4
n	26386	18766	7066	1383	74627	72496	3497

Table 5: conditional probability of moving into sector k by period 5 for those who were OLF in period 1 (in expansionary or contractionary phases)[a]

	wives	**single mothers**	**husbands**
OLF	*90.21	85.82	67.5
	86.8	81.89	69.79
unemployed	*0.25	0.38	7.5
	1.02	4.91	8.33
unpaid	1.91	0.38	0.5
	2.56	0	2.08
informal s-e	*3.15	8.43	13.5
	4.47	7.55	8.85
informal salary	1.41	1.53	2.0
	1.24	3.02	2.6
contract/piece	0.83	0.38	0.5
	1.11	0.38	2.6
formal wage	2.24	3.07	8.0
	2.68	1.89	5.2
firm owner	0	0	0.5
	0.04	0	0.52
n	2410	261	200
	2347	265	192

* The sample proportion between the two transitions within the cell is statistically different from zero.
[a] the probability of being in sector k in 1990:3 if the individual was OLF in 1989:3 is given as the top value of each cell; the probability of being in sector k in 1993:3 if the individual was OLF in 1992:3 is the bottom value in each cell.

Table 6: Explanatory variables used in labor force participation equation *

VARIABLE	RATIONALE FOR INCLUSION
Shock	
Unemployment rate: male national unemployment rate by quarter	proxy for labor demand and labor force entry as insurance
fall in household income	decrease in reservation wage
fall household earnings: * 0-9% * 10 - 24% * 25 - 49% * 50 - 74% * 75 - 100%	to consider the importance of the magnitude of the fall in household income
*spouse involuntarily OLF: dummy = 1 if husband was ILF in period 1 but was forced out of his job by period 5	proxy for a fall in family employment
* number of workers in household involuntarily OLF (less spouse)	proxy for a fall in family employment
Demographics	
age: reported age	proxy for experience (human capital theory)
school: reported years of formal education	human capital theory
married- dummy =1 if married and = 0 if in a consensual union	balance of power in the household (Fleck 1983)
*separated: dummy =1 changed from married or consensual union to single between the periods	fall in family income
Household structure	
young female adult: number of women in the household age 18-64	more adult females may substitute for female hh head in market or house work
*change in number of young female adults	change in time constraints
old female adults: number of women in the household age 65+	more older females may substitute for the head wife in household work OR incur costs on the head-wife's time
young male adult: number of men in the household age 18-64	more adult males may substitute for female hh head in market work
*change in the number of young male adults	change in hh income constraints
old male adult: number of men in the household age 65+	more older males increase household expenses OR incur costs on the head-wife's time
*newborn: (or wife) gave birth between periods 1 and 5	Additional constraint on time
children age 1-5: number of children in the household between the ages 1 and 5	more young children limit time available for market work
*change in young children: change in the number	Change in head wife's time

of children age 1-5 in the household between periods	constraints
children age 6-11: number of children in the household age 6-11	Change in head wife's time constraints
*change in school aged children: change in the number of children age 6-11 between periods	Change in head wife's time constraints
daughter age 12-17: number of girls in the household age 12-17	more older females may substitute for the mother in market or household work
*change in daughters age 12-17	
son age 12-17 household: number of boys in the household age 12-17	more older males increase household expenses, but they are also potential market earners
*change in sons age 12-17	
* additional child: dummy =1 if there are more own children in the household in period 5 than1	Additional constraint on head-wife's time
fewer children: dummy =1 if there are fewer own children in the household in period 5 than 1	Less constraints on head-wife's time
maid present: dummy =1 if a maid is present in the household	less constraints on the head-wife's time
number of adults in the hh	Substitution for market work
*change in number of adults in the hh	Change in potential substitution
Labor demand	
Regional dummies	proxy for regional labor market conditions
% LF female: calculated as the percentage of the municipal level labor market that is female	ease of labor market entry for women, crowding out of men
city size: calculated from the 1990 census data	proxy for the availability of jobs
Search resources	
household income: level of household labor income in period 1	proxy for either wealth or search resources
spouse was s-e- dummy: 1 if husband was self-employed in the last job	the spouse has information about employment in a previous job, decreasing current search costs
spouse was informal wage:dummy = 1 if husband was an informal wage employee in the last job	the spouse has information about employment in a previous job, decreasing current search costs
spouse was formal wage: dummy = 1 if husband was a formal wage employee in the last job	the spouse has information about employment in a previous sector, decreasing current search costs
spouse was contract: dummy = 1 if husband was a contract worker in the last job	the spouse has information about employment in a previous sector, decreasing current search costs

* a variable that measures change over the five periods

Table 7: Logit coefficient estimates of shock variables

	women			**men**	
	Wife	single mother	unmarried no kids	husbands	unmarried no kids
Model I:					
unemployment rate	0.35** (0.047)	0.26* (0.12)	-0.17 (0.42)	0.15 (0.12)	0.14 (0.33)
others involuntarily OLF	0.02 (0.025)	0.057 (0.05)	0.1 (0.19)	0.03 (0.5)	0.043 (0.15)
spouse involuntarily OLF	0.41** (0.13)	---	---	0.6 (0.58)	---
Model II:					
unemployment rate	0.36** (0.047)	0.27* (0.12)	-0.18 (0.42)	0.15 (0.12)	0.15 (0.33)
fall household income	$9.84\text{x}10^{-7}$** ($4.07 \text{ x } 10^{-7}$)	$1.0 \text{ x } 10^{-5}$** ($2.22 \text{ x } 10^{-6}$)	$7.32 \text{ x } 10^{-6}$ ($1.15 \text{ x } 10^{-5}$)	$4.58 \text{ x } 10^{-7}$ ($1.33 \text{ x } 10^{-6}$)	$7.83 \text{ x } 10^{-6}$ ($8.0 \text{ x } 10^{-6}$)
Model III:					
unemployment rate	0.36** (0.048)	0.26* (0.12)	-0.18 (0.42)	0.16 (0.12)	0.12 (0.33)
fall household income by:					
1-9%	0.032 (0.056)	0.03 (0.2)	0.49 (1.02)	-0.59** (0.18)	-0.19 (0.69)
10-24%	0.027 (0.05)	0.092 (0.17)	-0.029 (0.77)	-0.031 (0.15)	0.85 (0.61)
25-49%	0.16** (0.046)	-0.04 (0.18)	0.048 (0.69)	-0.1 (0.15)	0.37 (0.57)
50-74%	0.35** (0.058)	0.57** (0.22)	-0.23 (1.28)	0.17 (0.19)	0.79 (0.64)
75-100%	0.28** (0.056)	0.59** (0.15)	0.11 (0.86)	0.32* (0.13)	0.3 (0.63)
sample size	53463	6373	448	4193	542

** significant at the 1% level

* significant at the 5% level

--- variable is not, by definition, included in the sample

Table 8: logit estimates of demographic and household structure variables[1]

	women			**men**	
	Wife	single mother	unmarried no kids	husbands	unmarried no kids
Marital status					
married	-0.11* (0.058)	--	--	-0.021 (0.19)	--
separated	0.82** (0.31)	--	--	2.18 (1.2)	--
marry	--	-0.68* (0.31)	-0.65 (0.81)	--	---[2]
consensual union	--	-1.0* (0.41)	---[2]	--	1.09 (0.81)
Children					
newborn	-0.12* (0.055)	-0.35 (0.34)	---	-0.49 (0.46)	---
# children age 1-5	-0.093** (0.023)	-0.9 (0.12)	---	0.46** (0.14)	---
change in # children age 1-5	-0.41** (0.15)	-0.18 (0.46)	---	-0.34 (0.45)	---
# children age 6-11	0.017 (0.017)	0.016 (0.074)	---	-0.16 (0.071)	---
change in # children age 6-11	-0.15 (0.15)	-0.29 (0.34)	---	-0.003 (0.32)	---
# daughters age 12-17	0.069* (0.033)	-0.04 (0.084)	---	-0.068 (0.066)	---
change in # daughters age 12-17	0.28 (0.37)	1.2 (1.45)	---	0.29 (0.67)	---
# sons age 12-17	-0.0051 (0.031)	0.0052 (0.081)	---	0.09 (0.064)	---
change in # sons age 12-17	-0.35* (0.17)	0.27 (0.45)	---	0.027 (0.4)	---
# additional children	-0.28** (0.063)	-0.18 (0.22)	---	0.12 (0.21)	---
# fewer children	0.33* (0.12)	0.43 (0.23)	---	-0.027 (0.27)	---
Non-head adults					
# females age 18-64	-0.11** (0.031)	-0.063 (0.068)	-0.099 (0.29)	0.073 (0.043)	-0.0017 (0.21)
change in # females 18-64	0.087 (0.3)	0.85 (1.14)	---[2]	0.31 (0.54)	---[2]
# males age 18-64	-0.14** (0.029)	-0.19* (0.074)	-0.24 (0.39)	0.057 (0.043)	-0.44 (0.27)

change in # males age 18-64	0.12 (0.26)	2.33 (1.027)	---[2]	-0.21 (0.5)	---[2]
# females age 65+	0.086 (0.1)	0.11 (0.23)	---[2]	-0.23 (0.25)	-0.43 (0.61)
# males age 65+	0.056 (0.17)	-0.4 (0.51)	1.65 (1.57)	-0.21 (0.5)	0.32 (1.077)

[1] The coefficient estimates were very similar among models, and the significance levels were identical. Thus, only the estimates from Model IV, the model with the best fit, are reported here.

[2] Variable was dropped due to perfect predictability.

** significant at the 1% level

* significant at the 5% level

--- variable is not, by definition, included in the sample

Table 9: other variables from the logit regressions

	women			**men**	
	Wife	single mother	unmarried no kids	husbands	unmarried no kids
Demographics					
Age	0.062** (0.011)	-0.055 (0.031)	-0.018 (0.062)	-0.087 (0.044)	0.062 (0.051)
age^2	-000096** (0.00013)	-0.00013 (0.0003)	-0.00038 (0.00068)	0.002 (0.004)	-0.0012* (0.00056)
years of education	0.0054 (0.0054)	-0.014 (0.012)	0.036 (0.042)	-0.045** (0.012)	-0.072* (0.036)
Wealth					
household labor income in period 1	-2.7×10^{-6}** (4.69×10^{-7})	-6.67×10^{-6}** (2.11×10^{-6})	-2.69×10^{-6} (8.83×10^{-6})	-2.42×10^{-6} (1.38×10^{-6})	-1.01×10^{-5} (7.26×10^{-6})
Labor demand					
regional:					
North Central	-0.28** (0.099)	0.24 (0.28)	-0.39 (1.18)	-0.059 (0.24)	0.72 (0.97)
Pacific	-0.19* (0.089)	0.36 (0.26)	0.011 (1.14)	0.5* (0.22)	1.46 (0.95)
Northeast	0.032 (0.082)	0.035 (0.24)	-0.5 (1.01)	0.3 (0.21)	0.66 (0.88)
North	-0.21** (0.077)	-0.025 (0.24)	-0.69 (1.08)	0.22 (0.2)	0.84 (0.91)
North northeast	-0.16 (0.091)	0.032 (0.27)	-1.49 (1.25)	0.28 (0.23)	1.09 (0.97)
Central	-0.081 (0.08)	0.33 (0.24)	-0.68 (1.08)	0.59** (0.21)	1.98* (0.89)
Gulf Central	-0.13 (0.098)	0.097 (0.27)	-0.25 (1.21)	0.18 (0.25)	1.2 (0.99)
% local labor market female	0.48 (0.51)	3.97** (1.31)	-0.66 (4.53)	-2.95* (1.24)	-1.32 (0.38)
city size	7.11×10^{-9} (1.2×10^{-8})	-9.04×10^{-9} (3.57×10^{-8})	-1.5×10^{-7} (1.56×10^{-7})	6.15×10^{-8} (3.17×10^{-8})	1.36×10^{-7} (1.28×10^{-7})
sample size	53463	6275	448	4193	542
log likelihood	-17018	-2439	-216	-2441	-303
Chi^2 (d.o.f.)	770** (46)	466** (40)	54** (23)	380** (39)	65** (26)

The estimates are from Model 3, the Model that had the best fit. The coefficient values for Models I and II differ slightly, but the sign and magnitude of the coefficient estimates is very similar among the three models

** significant at the 1% level

* significant at the 5% level

Table 10: multinomial logit estimates of shock variables

	Wife			**Single mother**			**Husband**		
Pr(exit to formal):	self-employment	informal wage	contract/ piece work	self-employment	informal wage	contract/ piece work	self-employment	informal wage	contract/ piece work
Model I									
unemployment rate	-0.37** (0.074)	-0.39** (0.1)	-0.59** (0.12)	0.19 (0.36)	-0.29 (0.42)	0.22 (0.6)	0.14 (0.27)	-0.75* (0.36)	-1.04* (0.46)
others OLF involuntarily	0.068 (0.042)	0.15 (0.56)	-0.0033 (0.068)	0.074 (0.14)	0.12 (0.17)	0.26 (0.24)	-0.022 (0.11)	0.27 (0.16)	-0.0035 (0.2)
spouse OLF involuntarily	-0.28 (0.19)	-0.65** (0.23)	-0.35 (0.31)	---	---	---	1.59 (0.9)	---[2]	---[2]
Model II									
unemployment rate	-0.37** (0.074)	-0.39** (0.1)	-0.59** (0.12)	0.18 (0.36)	-0.29 (0.42)	0.22 (0.6)	0.12 (0.27)	-0.75* (0.36)	1.12* (0.46)
fall in other household income	1.19×10^{-6} (6.88×10^{-7})	3.43×10^{-6}** (9.08×10^{-7})	4.24×10^{-6}** (1.01×10^{-6})	2.87×10^{-6} (5.3×10^{-7})	2.57×10^{-6} (6.1×10^{-6})	3.23×10^{-6} (8.13×10^{-6})	-1.33×10^{-6} (2.97×10^{-6})	3.39×10^{-7} (4.12×10^{-7})	9.42×10^{-6} (7.68×10^{-6})
Model III									
unemployment rate	-0.36** (0.075)	-0.39** (0.1)	-0.58** (0.12)	0.16 (0.36)	-0.32 (0.43)	0.14 (0.61)	0.13 (0.27)	-0.74* (0.36)	-1.053* (0.46)
fall in income by:									
1 - 9%	0.051 (0.1)	0.085 (0.13)	0.18 (0.17)	-0.71 (0.8)	-1.3 (0.84)	-1.25 (1.0)	0.49 (0.38)	1.58* (0.79)	0.28 (0.72)
10 - 24%	0.45** (0.086)	0.26* (0.11)	0.32* (0.13)	0.56 (0.5)	0.36 (0.55)	0.98 (0.88)	0.25 (0.34)	-0.0027 (0.47)	0.16 (0.66)
25-49%	0.72** (0.068)	0.71** (0.092)	0.76** (0.11)	0.61 (0.58)	0.085 (0.62)	0.72 (0.94)	-0.13 (0.34)	-0.2 (0.48)	-0.19 (0.58)
50-74%	0.67** (0.074)	0.77* (0.11)	0.93** (0.13)	0.46 (0.57)	0.56 (0.7)	---[2]	0.025 (0.42)	0.094 (0.59)	-0.28 (0.78)
75-100%	0.16* (0.081)	0.43** (0.12)	0.55** (0.14)	-0.065 (0.46)	-0.21 (0.51)	0.51 (0.76)	0.0017 (0.26)	0.2 (0.39)	0.79 (0.56)
sample size	12223			801			1064		

** significant at the 1% level

* significant at the 5% level

Table 11: multinomial logit estimates of household structure variables

	Wife			**Single mother**			**Husband**		
Pr(exit to formal over):	self-employment	informal wage	contract/ piece work	self-employment	informal wage	contract/ piece work	self-employment	informal wage	contract/ piece work
Marital status									
married	-0.25** (0.087)	-0.16 (0.11)	-0.64** (0.16)	---	---	---	-0.12 (0.38)	0.058 (0.5)	0.44 (0.58)
separated	-0.83 (0.59)	-1.36 (0.77)	-1.47 (0.78)	---	---	---	---[2]	---[2]	---[2]
marry	---	---	---	1.06 (0.83)	0.72 (0.96)	---[2]	---	---	---
Household									
newborn	-0.18 (0.097)	-0.0096 (0.13)	-0.21 (0.16)	-0.14 (0.72)	-0.76 (0.78)	-0.047 (1.42)	0.36 (0.73)	0.64 (1.18)	0.37 (1.2)
# children age 1-5	-0.18** (0.039)	-0.11* (0.052)	-0.28** (0.06)	0.17 (0.27)	0.21 (0.32)	0.14 (0.47)	0.31 (0.22)	-0.2 (0.27)	-0.11 (0.3)
# children age 6-11	-0.19** (0.028)	-0.19** (0.037)	-0.24** (0.046)	-0.2 (0.18)	-0.44* (0.2)	-0.72** (0.25)	0.17 (0.13)	0.44* (0.21)	-0.26 (0.19)
# daughters age 12-17	-0.064 (0.037)	-0.12* (0.049)	-0.065 (0.061)	-0.11 (0.24)	-0.5* (0.26)	-0.32 (0.36)	0.12 (0.14)	0.21 (0.21)	-0.44* (0.21)
# sons age 12-17	-0.099** (0.038)	-0.15** (0.05)	-0.15* (0.06)	0.26 (0.21)	0.51* (0.26)	-0.055 (0.31)	-0.057 (0.13)	-0.068 (0.18)	-0.093 (0.23)
increase # children	0.042 (0.1)	0.16 (0.14)	0.11 (0.17)	0.15 (0.64)	0.63 (0.83)	-0.49 (0.88)	0.41 (0.4)	0.21 (0.56)	-0.74 (0.54)
decrease # children	-0.054 (0.21)	-0.18 (0.26)	0.73 (0.48)	0.54 (0.54)	---[2]	1.25 (1.16)	-0.63 (0.67)	-1.01 (0.78)	-0.34 (1.19)
# females age 18-64	-0.055 (0.046)	0.073 (0.065)	0.058 (0.079)	-0.1 (0.22)	0.33 (0.26)	-0.18 (0.34)	0.082 (0.097)	-0.0088 (0.13)	-0.0015 (0.18)
# males age 18-64	-0.18** (0.045)	-0.11 (0.063)	-0.043 (0.077)	0.23 (0.21)	0.23 (0.25)	1.5* (0.61)	0.0098 (0.098)	0.18 (0.15)	0.22 (0.2)
# females age 65+	0.46** (0.16)	0.22 (0.22)	0.083* (0.34)	-0.31 (0.64)	0.074 (0.83)	-0.48 (0.96)	0.47 (0.53)	0.95 (0.87)	0.035 (0.88)
# males age 65+	-0.18 (0.27)	-0.058 (0.39)	0.24 (0.54)	---[2]	---[2]	---[2]	0.19 (0.96)	-1.35 (1.07)	1.02 (1.38)
change in # adults	-0.0015 (0.19)	0.49 (0.28)	-0.23 (0.31)	1.093 (1.17)	1.73 (1.22)	-2.02 (1.37)	0.81* (0.37)	0.89 (0.53)	0.25 (0.63)

* the estimates are from Model 3, the Model that had the best fit. The coefficient values for Models I and II differ slightly, but the sign and magnitude of the coefficient estimates is very similar among the three models.

[2] dropped because the variable predicted failures perfectly.

Table 12: Multinomial logit coefficient estimates of remaining control variables

	Wife			**Single mother**			**Husbands**		
Pr(exit to formal sector):	self-employment	informal wage	contract/ piece work	self-employment	informal wage	contract/ piece	self-employment	informal wage	contract/ piece work
Demographics									
age	0.069** (0.021)	0.13** (0.027)	0.086** (0.034)	-0.025 (0.083)	0.041 (0.098)	-0.13 (0.16)	0.013 (0.071)	-0.0019 (0.096)	0.069 (0.12)
age^2	-0.0013** (0.00026)	-0.0017** (0.0034)	-0.0013** (0.00042)	-0.00092 (0.00085)	-0.00085 (0.0017)	0.001 (0.0017)	-0.00023 (0.0007)	0.00011 (0.00095)	-0.00071 (0.0012)
years of education	0.27** (0.087)	0.35** (0.012)	0.25** (0.015)	-0.1** (0.037)	0.3** (0.047)	0.27** (0.064)	0.098** (0.026)	0.18** (0.038)	0.051 (0.047)
Wealth									
household labor income period 1	2.82×10^{-6}** (6.34×10^{-7})	3.19×10^{-6}** (1.07×10^{-7})	-1.32×10^{-6} (1.11×10^{-6})	0.000014* (5.92×10^{-6})	-0.000015* (6.55×10^{-6})	-6.5×10^{-6} (8.1×10^{-6})	7.87×10^{-7} (3.24×10^{-6})	2.23×10^{-7} (5.15×10^{-6})	-6.66×10^{-6} (8.79×10^{-6})
Labor demand									
regional:									
North Central	0.14 (0.15)	0.23 (0.23)	0.72** (0.28)	0.86 (0.78)	0.071 (1.13)	2.36 (1.31)	0.44 (0.52)	-0.58 (0.76)	0.34 (0.89)
Pacific	0.044 (0.15)	0.1 (0.21)	0.27 (0.24)	-0.38 (0.76)	1.45 (1.09)	2.37* (1.17)	-0.042 (0.49)	-0.22 (0.74)	0.089 (0.83)
Northeast	-0.15 (0.13)	-0.13 (0.19)	-0.35 (0.2)	0.73 (0.7)	0.85 (1.0)	1.33 (1.04)	-0.98 (0.53)	-1.3 (0.75)	-1.58 (0.79)
North	0.48** (0.12)	-0.0061 (0.18)	0.62** (0.2)	0.83 (0.68)	0.31 (1.01)	2.32* (1.05)	0.076 (0.43)	-0.44 (0.67)	0.99 (0.78)
North northeast	0.00039 (0.15)	-0.3 (0.21)	0.41 (0.25)	0.37 (0.76)	0.49 (1.12)	2.83* (1.32)	0.17 (0.49)	-0.054 (0.77)	0.9 (0.92)
Central	-0.0038 (0.13)	-0.16 (0.19)	0.29 (0.22)	0.7 (0.69)	0.31 (1.01)	1.94 (1.083)	0.63 (0.44)	0.027 (0.69)	0.026 (0.76)
Gulf Central	-0.86** (0.16)	-0.66** (0.23)	0.31 (0.27)	-0.42 (0.83)	0.93 (1.2)	1.76 (1.25)	0.36 (0.53)	-0.58 (0.79)	0.0097 (0.94)
% local labor market female	0.79 (0.86)	1.48 (1.18)	-4.37** (1.45)	-4.2 (3.6)	-0.15 (4.27)	1.04 (6.24)	-1.54 (2.8)	1.71 (3.91)	-8.97 (4.89)
city size	3.11×10^{-8} (1.8×10^{-8})	2.38×10^{-8} (2.68×10^{-8})	2.34×10^{-8} (3.07×10^{-8})	1.28×10^{-7} (1.01×10^{-7})	$-8.73\times10^{-8=}$ (1.53×10^{-7})	-6.58×10^{-8} (1.7×10-^{7})	2.0×10^{-8} (6.95×10^{-8})	-1.05×10^{-7} (1.03×10^{-7})	1.41×10^{-7} (1.18×10^{-7})
Search									
spouse was self-employed	-0.57** (0.097)	-0.29* (0.13)	-0.15 (0.16)	---	---	---	-0.13 (0.33)	-0.21 (0.45)	-0.65 (0.51)

spouse was informal wage	-0.13 (0.13)	-0.4* (0.16)	0.024 (0.2)	---	---	---	0.09 (0.55)	0.23 (0.77)	-1.26 (0.71)
spouse was formal wage	0.13 (0.093)	0.22 (0.13)	0.36* (0.15)	---	---	---	-0.0038 (0.31)	0.63 (0.55)	0.41 (0.57)
spouse wage contract	-0.29* (0.13)	-0.32* (0.17)	-0.42 (0.19)	---	---	---	-1.0 (0.8)	-0.71 (1.06)	0.12 (1.18)
sample size	12223			801			1054		
log likelihood	-11804			-766.9			-1105.36		
Chi^2 (d.o.f.)	4151** (114)			283** (99)			175** (108)		

the estimates are from Model 3, the Model that had the best fit. The coefficient values for Models I and II differ slightly, but the sign and magnitude of the coefficient estimates is very similar among the three models.

** significant at the 1% level

* significant at the 5% level

IX. References

Ashenfelter, Orley and R. Layard (1986), ed. *Handbook of Labor Economics, Vol. I* (Elsiver Science Publishers).

Becker, Gary (1991). *A Treatise on the Family (Enlarged Edition)* (Harvard University Press: Massachusetts).

Chant, Sylvia (1991) *Women and Survival in Mexican Cities: Perspectives on Gender, Labor Markets and Low Income Households.*

Cunningham, Wendy and William Maloney (1998) *Heterogeneity among Mexico's Micro-Enterprises An Application of Factor and Cluster Analysis*, Policy Research Working Paper 1999 (Washington, DC: The World Bank).

Davila, Enrique (1997) "Mexico: The Evolution and Reform of the Labor Market" in *Labor Markets in Latin America: Combining Social Protection with Market Flexibility* Sebastian Edwards and Nora Lustig, ed., (Brookings Institute: Washington, DC), 292-327.

Fleck, Susan (1983) *The Political Economy of Intrahousehold Resource Allocation: A Non-Cooperative Sequential Move Game* (unpublished).

Gruber, Jonathan and Julie Cullen (1996) "Spousal Labor Supply as Insurance: Does Unemployment Insurance Crowd-out the Added Worker Effect?" NBER Working Paper #5608.

Haddad, Hoddinott, and Alderman (1997) *Intrahousehold Resource Allocation in Developing Countries* (Johns Hopkins University Press: Baltimore).

Heckman, James and Thomas MaCurdy (1980) "A Life Cycle Model of Female Labour Supply" *Review of Economic Studies* 48(47), 47-74.

Heckman, James and Thomas MaCurdy (1982) "Corrigendum on A Life Cycle Model of Female Labour Supply" *Review of Economic Studies* 49(49), 659-660.

Khandker, Shahidur (1988) "Determinants of Women's Time Allocation in Rural Bangladesh" *Economic Development and Cultural Change* 37(1), 111-126.

Lundberg, Shelly (1985) "The Added Worker Effect" *Journal of Labor Economics* 3(1), 11-39.

Lustig, Nora (1992) *The Remaking of an Economy* (Brookings Institute: Washington, DC).

Maloney, Tim (1991) "Unobserved Variables and the Elusive Added Worker Effect" *Economica* 58(230), 173-187.

Maloney, Tim (1987) "Employment Constraints and the Labor Supply of Married Women: A Reexamination of the Added Worker Effect" *The Journal of Human Resources* 22(1), 51-61.

Maloney, William (1998) *The Structure of Labor Markets in Developing Countries: Time Series Evidence on Competing Views.* Policy Research Working Paper #1940 (Washington DC: The World Bank).

Marquez, Gustavo (1994) *Regulacion del Mercado de Trabajo en America Latina* (Chile: CINDE).

Mincer, Jacob (1962) "Labor Force Participation of Married Women" in *Aspects of Labor Economics* H. Greg Lewis, ed., Universities NBER Conference Series no. 14 (Princeton Univ. Press: Princeton, New Jersey).

Nakamura, Alice and Masao Nakamura (1992) "The Econometrics of Female Labor Supply and Children" *Econometric Reviews* 11(1), 1-71.

Pradham, Menno and Arthur Van Soest (1997) "Household Labor Supply in Urban Areas of Bolivia" *Review of Economics and Statistics* 79(2), 300-311.

Psacharopoulos, George and Zafiris Tzannatos (1992) *Women's Employment and Pay in Latin America: Overview and Methodology* (Washington, DC: The World Bank).

Ros, Jaime et. al. (1996) "Prospects for Growth and the Environment in Mexico in the 1990s" *World Development* 24(2), 307-323.

Smith, James P. (1983) *Female Labor Supply: Theory and Estimation* (Princeton, NJ: Princeton University Press).

Stiglitz, J.E. (1986) "Alternative Theories of Wage Determination and Unemployment in LDCs: The Labor Turnover Model," *Quarterly Journal of Economics* 88, 194-227.

Standing, Guy (1989) "Global Feminization through Flexible Labor" *World Development* 17(7), 1077-1096.

Thomas, J. J. (1992), *Informal Economic Activity* (Ann Arbor: University of Michigan Press).

Valletta, Robert G. (1993) "Union Effects on Municipal Employment and Wages: A Longitudinal Approach" *Journal of Labour Economics* 11(3).

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